

# Standardisation as a Vehicle Towards eGovernment

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**Abstract.** The development in Europe in recent years in public services has dealt with building-up the data resources, the infrastructure and application of e-government services. Latest, the Danish way has been driven forward by the 2012-2015 mutual authority strategy of digitalisation of the public services nationally and locally.

The Danish Geodata Agency has contributed to this process by offering geodata as a means to (1) discover and find public data sources put into a title: “The Place as the Entry for Public Service Management” and (2) register and administer public values by connecting the geo-object to the registered object attributes of a domain specific public data source.

The future needs for developing and applying public administrative IT-based functionality by self-service is a prerequisite of this presentation. This caused by present finance difficulties and demography developments.

The presentation will cover the challenges, solutions, work and results that have been achieved this far and as well as future work to come – not to forget the emerging needs for governance. Also the distribution strategy, data models and perspectives will be disseminated.

Work done by the European Commission and the implementation of the INSPIRE Directive has been helpful along with a long tradition of international standardisation within the field of geographic information.

**Keywords:** e-Government, Standardisation, Public Administration, Geodata, Public Data

## Introduction

There is a long and, well acknowledged and established tradition in the Danish public administration to use digital solutions, data and registers, e.g. containing information about citizens, companies and real estate. These registers have until now been scattered over a rather large amount of distribution platforms and methods. If one just looks at the geospatial data there have been a data warehouse (Map Delivery System), and for the environmental geospatial data there have been a portal with functionality almost similar to the Map Delivery System. Both of these methods of distribution use international standards and specifications from ISO/TC211 and OGC. If one looks at the domains in question it is quite evident that this needs to be changed. This change will occur soon according to plans: with a lot of public data in the registers migrated into one distribution platform i.e. a central data distributor. In order to achieve interoperability between the different owners of the various registers it is necessary to use international standards and specifications. These standards will be both domain specific as well as domain independent.

One can ask the question, why this difference in distribution platform? – The answer is two-sided. First, this is seen as a way to save money in the public sector, since the present owners and administrators of the solutions, data and registers do not all have to set up and maintain their own individual distribution platform. Secondly, there is an expected change in the demography (i.e. age distribution) over the next couple of decades. These changes require action in the way the Danish public sectors spend their money and run the social welfare

These changes can only be achieved if there is a certain amount of willingness to use both accepted international standards as well as some of the best solutions that can be observed nationally as well as internationally. Both will be the vehicle for this process.

The place as an entry point has for some years been used as one of the main arguments for the use of geospatial data in the public sector as well as in the private sector. In order to ensure the dissemination and use of geospatial data across the public and private sector the Danish Geodata Agency has launched a partnership program in order to ensure that all the interested parties have access to the necessary information needed for backing up this statement. The place as an entry point has also been backed up by the INSPIRE directive as well as the ever growing need for a national Danish geospatial infrastructure.

All issues mentioned above led to a situation where the Ministry of Finance came to the conclusion that it was worth while to investigate if there were

business case in making the data prepared for various administrative purposes (i.e. the basic data) freely available on a common distribution platform. The result turned out to be: there was a good business case for setting up a basic data program.

## **The Basic Data Program**

### **1.1. The Selection of Public Data**

The Danish central and local administrations agreed to join forces developing a strategy and an action plan outlining a step forward against fulfilling the vision and strategy of getting a public administration driven by IT and digitised public data with minimised use of human interference. And the work started to point out candidates of public registers and datasets suited for forming the base of automatic administration of legal rules and legislation. The data chosen were data on individual citizens, businesses, companies and enterprises, buildings, dwellings and addresses as well as many geographical data. See Figure 1.

#### **What is basic data?**

Basic data is fundamental information included in day – to – day case processing by the authorities.

Basic data is especially important because it is used again and again across the entire public sector. It may be data about people (e.g. Civil Registration System number), companies (Central Business Registration number), addresses, real estate (e.g. cadastral numbers) and geography (e.g. digital maps and electoral constituencies) etc.

Basic data can contain personal data which is and will be protected by the Act on Processing of Personal Data.

Several of the projects were interdependent. The addresses managed by the municipalities were distributed between central agencies and in terms of development and registration as well as supported by geographic data and functionality. The Ministry of Housing, Urban and Rural Affairs is responsible of coordination and improving the usability of address data and maintenance functionality in cooperation with the Danish Geodata Agency supporting addresses with toponymes and road geometry.

In the end income tax data were omitted among the suggested datasets. Later, the environmental and military authorities have shown interest in joining the initiative. During the Basic Data Program it was rapidly

acknowledged to carry out some projects for improving data quality and adding functionality for data and web services which were already in use. In order to get the developing program working, the different initiatives were divided into adequate pieces and turned into projects.

A user requirement on versioning and unique identification led to a work on those topics. The work will continue on other datasets and interfaces.

Wrapping up the decisions made by the steering committee on selection of datasets, first release covers:

- data on individuals
- data on businesses
- data on real properties, buildings, dwellings and addresses
- data on maps and geography, core data from INSPIRE annex I and II and buildings (annex III) and topographic map data

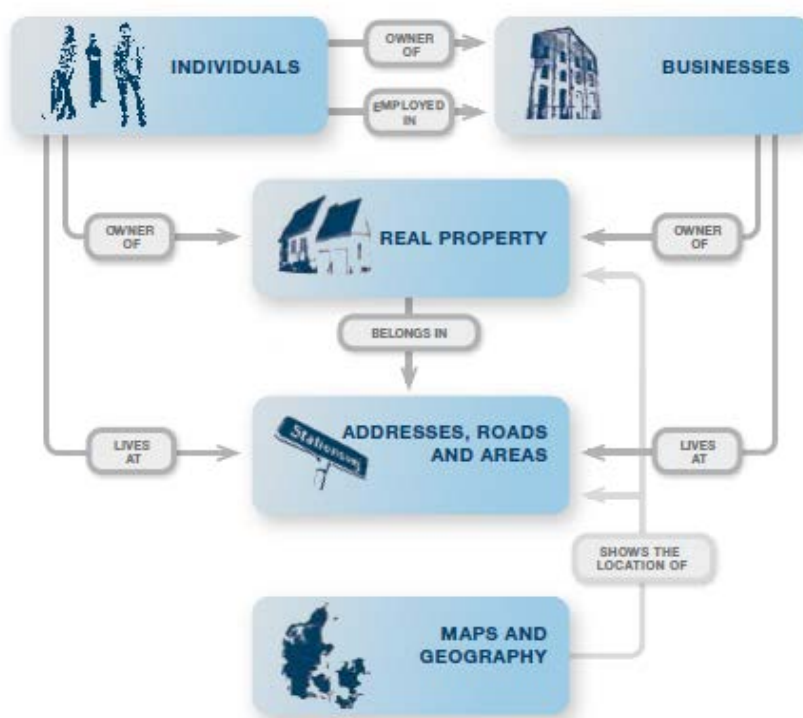


Figure 1. The Model of Concepts of (parts of) the Danish Public Sector (Ministry of Finance, Danish Agency for Digitisation).

## 1.2. The Central Data Distributor

One of the ideas behind the Basic Data Program was to centralise distribution of data established and maintained from production systems in different agencies. The assumptions were that users would expect and hope for high availability, rapid responses to queries and adequate support. See Table 1 for an outline on the data volumes, the dynamics and the frequency of extractions for every public dataset. The need for standardised approaches and methodology has been obvious, and existing ISO, (CEN) and OGC standards have been used.

And in order to fulfil the expectations, the design specification contained requirements to operate 24/7 and be ready for scaling up the load capacity especially when deadlines emerge and the amount of users grows fast. The vendor that will operate the Central Data Distributor will be selected by a public tender. Danish law demands that public administrative data should be hosted on Danish soil – so the solution is obliged to comply.

Support is divided into a first and second line support. First line support has been appointed to the responsible operator and for second line support questions or requirements will be transferred to the national agency which maintains the public data for further investigation and decision.

The Central Data Distributor will publish the data which have been harmonised in terms of general properties, e. g. local unique identifiers, bi-temporal attributes: legal duration and register timestamp, events and states. Defined, semantics and formatted in the same way.

The Basic Data Program will be modelled in a way that we expect private users and companies will adapt and applicate into their own administration tools. Local and regional governments are obliged to use and administer the public values and offering the services that citizens expect.

	Dataset volume	Dataset dynam-	# of object	Extrac-
Geodata	20.000 GB	2000 GB / year	app. 90	1.000.000.000
Build. & Ad-	100 GB	2 GB / year	< 10	10.000.000
Citizens data	2000 GB	2 GB / year	2	12.000.000
Company data	20 GB	1 GB / year	< 0	2.000.000

**Table 1.** Statistics on Danish Public Data (Danish Geodata Agency and the Danish Agency for Digitisation – figures from the end of 2012).

### **2.3 Mutual standardisation and coordination**

The vehicle which will govern the work on implementing the Basic Data Program is harmonisation, standardisation and use of common methods, tools and templates. The need was acknowledged even if the way to resolve the objectives were vague and not familiar.

The datasets will in phase 1 be migrated “one-to-one” from their distribution systems into the Central Data Distributor, without remodelling or improving the functionality that support the application in a Service Oriented Architecture. (SOA).

A preparing subproject dealt with establishing a model for concepts and a start of a public service ontology due to the different sectors’ non-standard way of communicating their business or administration tasks and services.

A very important issue was raised during the initial work on writing the strategy and fields of work, namely how to manage or rather govern the program. Initial a light form of governance was suggested, but the data owner’s foresaw hardship if a rather strong governance was not established. In the end a new central Basic Data Program Board was set up and endorsed and has (April 2013) just begun its work on governing the 10 main programs, which in turn had up to 10 projects to deal with.

### **Conclusion**

The start of an innovative way of administering the Danish society has been followed up with projects and initiatives which will constitute and realise the Strategy 2011-2015. Many big and small obstacles emerge from behind. The least problems are the technical ones. The future work will need a thorough investment in strong governance in terms of leadership, management and technology. In our opinion the governance issue is the most underestimated task right now.

We are convinced that hard work, standardisation at all levels and governance are the only ways to succeed. Until now the rails has been laid towards a future society where the Danes will communicate, service and will be serviced by digital means all hopefully based on standardised methods and means. Here – it is adequate to raise a warning: Changing a public service to operate without human contacts will be more than hard for citizens without proper knowledge and skills in operating and connecting internet-wise. Some groups of elderly and handicapped citizens can and will be lost in the transition.

But – we are sure that this way of using geodata and the methods used in the geodata sector (e. g. standardisation) will be beneficial to the society in general while IT-technology is sweeping over the nations and continue conquering yet another sector or niche on its way.

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